4562 & a

4562 & a

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 4562

LOCALITY

State Florida

General locality Gulf Coast

Locality Old Tampa Bay

1926

~~1925~~

CHIEF OF PARTY

Ray L. Schoppe

LIBRARY & ARCHIVES

DATE .....

8-1870-1 (1)++

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET

NO.
(Field Sheet "A")

OLD TAMPA BAY FLORIDA

STEAMER BACHE

RAY L. SCHOPPE, COMMANDING

1926.

DESCRIPTIVE REPORT

to accompany

Sheet No. (Field Sheet A)

This sheet is a resurvey of Old Tampa Bay, Fla., covering the entire Bay North of Port Tampa.

(a) General Description of the coast.

The entire shore line is low and flat. Dense foliage (mostly mangrove) covers the shore except where the trees have been cut away in the vicinity of building operations. At Port Tampa the high phosphate elevators and water tanks show from all angles of approach. Gandy Bridge crosses the Bay a mile North of Port Tampa. This structure, approximately 5 miles long is half concrete spans and half hydraulic fill. A narrow draw span (70 feet opening) is located over the main channel 1 mile from the Eastern end. North of Gandy Bridge for about 3 miles on the East side of the Bay considerable building activity is noted but the extent of this development depends on the continuance of the present "Florida Boom". If the owners do all the dredging and filling that has been proposed, the entire shoreline will be changed and numerous channels will be carried out to deep water.

Rocky Point shows as a clump of trees sometimes hard to distinguish against the more distant tree line. The West side of the Bay is absolutely undeveloped from Gandy Bridge to Bayview (Latitude 27° 57.5') At this point a small landing dock has been maintained for many years but this dock bares at lowest tides. It's commericial value is nil. At Safety Harbor a small landing dock has been built which bares at lowest tides. The tall tank and large hotel at Safety Harbor conspicuous day marks. At the head of the Bay at Oldsmar is a dock with 6 feet at the outer end at M.L.W. This dock is very little used. Coopers Point, Philips Point and Booth Point are wooded but are not conspicuous.

There are no outlying dangers or islands.

Currents in this area are very erratic. In calm weather they set fair with the channel and turn about the same time as high or low water. The winds exert a strong influence on currents. A strong N.E. breeze will reverse a flood current and blow a good share of the water out of Old Tampa Bay; no matter at what stage the tide may be.

At Gandy Bridge Draw Span, the current sets nearly North and South. There is enough cross current in the draw to make it a ticklish proposition for a vessel the size of the BACHE to pass through on a fair tide. Especial care is needed at this draw span because in 1926 the electric current operating the lift was known to be unreliable. In case the power fails, one side of the lift can, after some delay, be opened by hand gear.

Landmarks are limited to artificial objects. Numerous elevators, water and oil tanks at Port Tampa are visible all over the bay. An observation tower at the "Club San Remo" lies 3/4 mile South of the West End of Gandy Bridge. In 1926 this tower was brilliantly lighted at night and could be seen for miles. Gandy Bridge furnishes several easily distinguished marks. Tile roofed houses are built for toll houses at the East and West ends of the bridge. The tender's red roofed house on the draw span is easily distinguished. The ends of the concrete structure (on both east and west ends) where the fills leave off) are useful for cross bearings. A prominent observation tower at "Bell Mar" lies 1¼ miles north of the east end of Gandy Bridge. The most prominent object North of the Bridge is the tall water tank at Safety Harbor. During the Winter months this seldom shows due to haze in the lower part of Old Tampa Bay. Inshore dangers in the form of extensive flats cover the larger part of the Bay. The BACHE, drawing 10½ feet was able to reach a point 7 miles above Gandy Bridge. Gas boats drawing 6 feet are able to reach Oldsmar at any ordinary stage of the tide. A few small fish boats are able to move into the sloughs North of Rocky Point at high tide. Generally speaking, there is no traffic North of Gandy Bridge. The West side of the Bay between Gandy Bridge and Bellview is absolutely deserted. The chart is a guide to the channels and there are no aids to navigation except a few private beacons and stakes.

South of Gandy Bridge fill is an irregular channel dug to furnish water for the hydraulic fill. The depth and width of this channel varies according to the needs of the fill. At present extensive building operations along Gandy Bridge indicates that this channel will be entirely changed.

270°

The anchorage off the A. C. L. docks at Port Tampa is of limited extent, but is deep enough to accomidate any vessel that can enter it through the dredged cuts. This anchorage is obstructed by a 19 foot rocky patch 300 meters 270 degrees true from ~~the N. W. corner of Port Tampa Dock~~ E end. This is marked by a H.S. buoy. The anchorage is of limited area. Strong currents make it a difficult palce to manoeuver in except at slack water. This party saw numerous freighters aground North of Port Tampa docks where they had failed to estimate the strength of a flood tide.

Changes in coast line or depths seem to be remarkably few. Old soundings taken from the chart agree very closely with those taken by this party. On the shore end of the lines, this was true to a marked extent. Parties landing for shore work were continually travelling over these areas and it was noted by them that no changes had taken place. Actual soundings were not carried further inshore because of weather conditions in February. It is usually windy and choppy at that season and no changes could reasonably be expected after a consideration of information above.

It is therefor believed that the Instructions have been fully complied with in this respect.

The old low water line on the West side of the Bay seems to be the present mangrove line. This is a minor matter and the present condition is shown on the topo sheet.

Dangers are shown on the chart, no special mention is needed. a 6 foot spot in latitude 27° 58' in the middle of the Bay is less than was found on the old survey. The shoal in Port Tampa anchorage is noted above.

Survey methods follow the usual custom for launch hydrography. All positions are located by sextant fixes. Launch No. 2 was used wherever depth of water permitted. Launch No. 1 was used in shoal areas but the choppy condition of the Bay in February made it dangerous to use an open launch very far from shore. According to Instructions, half mile lines were run at first but they failed to show sufficient detail to be of much use, so quarter mile lines were run in the head of the Bay. Splits were run wherever further information was needed.

Tide gauges were established on Gandy Bridge and at a landing in Bay view. There is so much shoal water in this area that rapid and erratic changes of tide level were noted in windy weather. A few poor crossings of lines are undoubtedly due to this cause. Along the East shore, south of Rocky Point the sounding lines were run up among the lot stakes of proposed property development schemes

The following names are well established and should be shown on the chart.

Safety Harbor is a small town. Lat. 27° 59'.5 Long. 82° 41'.5
Oldsmar is a small town. Lat. 28° 02' Long. 82° 40'

Cuthbert Bayou and Gun Branch have been absorbed by fancy named sub-divisions. These two features have been obliterated by drainage ditches.

De Soto Bayou is the accepted name for the bight North of Philips Point.

Respectfully submitted,

Ray L. Schoppe

STATISTICS SHEET NO. (Field Letter A)

Date, 1926	Letter	Volume	Positions	Soundings	Miles Statute	Vessel
January 13	a	1	31	211	8.5	Lch. # 2
" 14	b	1	83	481	25.7	" "
" 15	c	1	131	590	31.6	" "
" 21	d	1	25	145	7.8	" "
" 21	d	2	63	373	21.4	" "
" 26	e	2	106	507	27.5	" "
" 28	f	2	77	384	21.0	" "
February 26	g	2	43	210	11.2	" "
" 26	g	3	30	178	6.0	" "
March 3	h	3	171	637	35.1	" "
" 4	j	3	138	473	25.6	" "
TOTAL			898	4189	221.4	

Date, 1926	Letter	Volume	Positions	Soundings	Miles Statute	Vessel
January 27	a	1	63	304	13.2	Lch. # 1
February 12	b	1	37	169	8.4	" "
" 16	c	1	120	543	27.54	" "
" 17	d	1	57	405	8.2	" "
" 17	d	2	18	148	3.5	" "
" 18	e	2	91	662	14.3	" "
" 23	f	2	35	246	6.9	" "
TOTAL			421	2477	81.9	

C.U.S.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON May 2, 1927.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4562

Old Tampa Bay, Tampa Bay, Fla.

Surveyed in 1926

Instructions dated June 3, 1924 (HYDROGRAPHER)
Dec. 3, 1925 (RACHE)

Chief of Party, R. L. Schoppe.

Surveyed by R. C. Overton.

Protracted by F. G. Johnson, G. M. Marchand.

Soundings plotted by F. G. J.

Verified and inked by G. Risegari.

1. The records conform to the requirements of the General Instructions with these exceptions:

   (a) No bottom characteristics are noted in the records for "h" and "j" days (launch No. 2) covering the area south of Gandy Bridge.

   (b) No bottom characteristics entered on "e" day (launch No. 1) covering the area in De Soto Bayou.

   (c) Only one or two bottom characteristics entered on "f" day (launch No. 1).

2. The plan and character of development satisfy the requirements of the General Instructions except that the lines should have extended closer inshore.

3. The plan and extent of the survey satisfy the specific instructions. The departure in places from half-mile lines is justifiable.

4. The information is sufficient for drawing the depth curves with the exception of the low water line which was entirely undeveloped by the hydrographic party. Also the 6 foot curve was incomplete in spots.

5. The sounding line crossings are generally good. There is one very poor crossing south of Gandy Bridge, just at the edge of the channel. A 14 foot sounding on 24-25 j crosses an 18-19 foot sounding on 49-50 g.

6. The usual field plotting was done by the field party and was satisfactory. Explanatory notes giving reasons for rejecting certain positions were not made. South of Gandy Bridge, bottom characteristics were noted on the sheet (h and j days, launch No. 2) but no authority could be found for them in the sounding records. Probably noted by hydrographer at time of sounding but rejected by recorder. C-B

7. The junction with the adjacent contemporary survey H. 4565 will be taken up when that sheet is reviewed.

A comparison of this sheet with the old survey H. 1273 shows a remarkable agreement in the depths. Little change seems to have taken place over a period of fifty years. It is therefore recommended that in compiling the new chart, the soundings on this sheet, north of Gandy Bridge, should be supplemented by the soundings from the old survey wherever needed and where no conflict will result. (Concurred in by Chief of Field Work.)

8. Attention is called to the following:

a. The boat sheet for the upper half of this sheet contains a carefully delineated line that appears to be a low water line. Numerous notes also appear on the boat sheet to the effect of "Bare at low water." This line is shown considerably offshore and in no way agrees with the low water line on the old survey. It also conflicts with a statement by the Chief of Party in the Descriptive Report that no changes have taken place inshore. (See Descriptive Report, page 2, last paragraph.) A comparison with the old survey shows a remarkable stability in the shoreline and in the 6 foot curve. It is therefore believed unlikely that any such changes in the low water line as shown on the boat sheet would have taken place. The boat sheet for the lower half of the sheet shows no such line. It is further to be observed that the topographer does not show any extensive low water line on any portion of his sheet. Ch. of Party advised that note on boat sheet applies to lowest water after storm has blown water out of bay. C-B This matter has been referred to the field party for further information and until received no final action can be taken.

b. Three doubtful soundings appear on the sheet that should have been definitely disposed of by the field party. They are the following:

(1) A 13 foot sounding at the edge of the main channel in Latitude 27° 52' 800 m., Longitude 82° 32' 1570 m. The sounding is sur-

rounded by 17 to 21 feet and is probably an error in reading the leadline. Nothing is mentioned in the records relative to this. The 13 foot sounding was therefore retained on the sheet. *Plot 13 ft sdg. R-S*

(2) A 15 foot sounding also at the edge of the main channel in Latitude 27° 51' 720 m., Longitude 82° 33' 1100 m. Although the record states that an error of one fathom was probably made in reading the leadline and that no obstruction is known to exist here, it was considered, on examination of the sheet, that owing to the protruding character of the 18 foot curve here and the sparsity of soundings, the information is insufficient to warrant a rejection of the original sounding. *Plot 15 ft sdg. R-S*

(3) A 19 foot sounding in mid-channel just above the A.C.L. docks at Port Tampa. It lies in Latitude 27° 51' 1600 m., Longitude 82° 33' 460 m. Although a note appears on the record signed by the Chief of Party to "plot as 25", this was not considered sufficient proof of its non-existence in view of its important location. Furthermore the Chief of Party in his Descriptive Report, page 2, paragraph 3, says: *Plot 19 ft. sdg. R-S*

> "This anchorage (off A.C.L. docks) is obstructed by a 19 foot rocky patch 300 meters 320° true from the northwest corner of Port Tampa Dock. This is marked by an H. S. buoy."

"This note will be corrected in report by C. of P." R-S

It is to be noted that this bearing and distance checks the plotted position of the above 19, but the notation is incorrect as to being marked by an H. S. buoy. Then again, if the charted obstruction of 20 feet was intended, then the notation is incorrect as to location and depth, for the smooth sheet shows 21 feet as the least depth obtained at the buoy and not 19, and this obstruction lies about 500 meters to the southwest of the above mentioned 19. Therefore paragraph 3 of the Descriptive Report relative to the above mentioned 19 should be ignored and the chart compiled as shown by the smooth sheet. However, the matter should be referred to the Chief of Party for explanation.

c. About 350 meters southwest of △ E. Pole near the east end of Gandy Bridge there are several soundings that appear doubtful. An examination of the records shows that some confusion existed at the time, which may possibly account for the apparent discrepancies. However, no sufficient information exists to warrant a change, and the soundings and positions were accepted as recorded. *Due to dredging for material and not for cutting channel. R-S*

9. Additional work should be done to clear up the doubtful points mentioned in paragraph 8 and also if important to extend the work inshore to develop the low water line.

10. Character and scope of surveying - Good.
Field drafting - Good.

11. Rewiewed by A. L. Shalowitz, April, 1927.

Approved:

A. L. Giacomini
Chief, Section of Field Records (Charts)

L. O. Colbert
Chief, Section of Field Work (H. & T.)

Instructions issued for examination of critical places, work to be done by Hydrographer.

Report on Hydrographic Sheet 4562.

Records:

Satisfactory in general.

Exceptions: For some unknown reason nearly all the characters of the bottom south of Sandy Bridge were omitted in the records but were indicated on the smooth sheet, — h and j days (red).

Failure to record the bottom of De Soto Bayou was noted both in the plotting and in the records, — a day (blue).

Protracting:

Satisfactory.

Exceptions: There were two sets of signals which when the line grew to be practically indeterminate ~~as the line was~~ lengthened in one case, both of which were due to their reverse nature, — 61a b to 64 b days (red) and 37 a, 38 a day (blue). The former positions were rejected by the field party and no accompanying explanation was given for their rejection as is required by the Instructions. Two of the rejected positions 61a b + 626 were found to be determinate and were accepted by the T. R. Section. Every condition imposed upon them seemed to satisfy the accuracy of their location. The other positions were plotted by time, angle or angles, and course.

In the second case 37a to 38 a (blue) the work was rejected as unplottable.

Plotting:

Satisfactory.

Miscellaneous:

Reference might be made here regarding position 146 h (red). A note in the remarks column states that the 14.9 feet recorded should be 20.9 feet as no obstruction is known to exist there. Upon reexamination and discussion of this spot, it was decided upon by the T. R. Section to accept the recorded depth, — there being not strong enough evidence to discountenance the recorded sounding.

(over)

Report on
Hyd. 4562 (cont.)

Signal Run near Coopers Point was found to have been changed and that a number of sounding positions using it did not use its new location. This accounts for some inaccuracies in the plotting of the soundings by the F.P., the largest of which is 100 meters. See 32c (blue).

Positions Point, End + K were used but failure to plot them on smooth sheet was noted.

Draftsmanship etc.
Satisfactory.

Respectfully submitted,
S. Pisegani

Jan. 15, 1927

Additional report:-
Signal "Point":-
This signal on Hyd. sheet was shown as a prick point on Topo. sheet and unnamed thereon. The boat sheet gives the name "Point". The positions effected are 15f (blue) to 22f (blue) blocking the full protracting of the positions involved the prick points on the hydro sheet proved to be position "Point".

Copy for Records Section

(11)

October 22, 1927

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 4568 Add'l.

Locality: TAMPA BAY, FLORIDA.

Chief of Party: H. P. Hyman 1927
Plane of reference is MLW
2.4 ft. on tide staff at Gandy Bridge.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DFM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

November 2, 1927.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4562 (Additional work)

Vicinity of Port Tampa, Florida

Surveyed in 1927

Instructions dated October 4, 1927 (HYDROGRAPHER)

Chief of Party, R. P. Eyman.

Surveyed by R. P. E.

Protracted and soundings plotted by J. T. Jarman.

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions and the plan and character of the surveying satisfy the specific instructions.

2. The work was submitted to the office on the old boat sheet and was plotted on the smooth sheet in the office.

3. The survey consisted of examinations on four shoal soundings (13, 17, 19 and 15 feet) in the channel near Port Tampa.

   The minimum depth found on the 13 foot spot was 18 feet and the 13 has been expunged from the sheet, retaining a 17 foot sounding close by.

   Sixteen feet was found close to the 17 foot sounding (960 meters north of △ Tank No. 2). Both the 16 and 17 will be retained on the sheet, and should be charted.

   Twenty-six feet was the least depth found on the 19 foot spot, and the 19 has been expunged.

   Nineteen feet was the least depth found on the 15 foot sounding, and the 15 has been expunged.

4. The developments were sufficient for the purpose specified and no further surveying is required.

5. The character and scope of the field surveying are excellent.

6. Reviewed by E. P. Ellis, October, 1927.

Approved:

Chief, Section of Field Records (Charts)

L.O. Colbert

Chief, Section of Field Work (H. & T.)

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 10-rs

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

May 9, 1927.

To: Commanding Officer,
Coast and Geodetic Survey,
Ship BACHE,
Pensacola, Florida.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Review of hydrographic sheet 4562.

There is forwarded herewith a reduced photograph of hydrographic smooth sheet 4562. In the review of this sheet, the following criticism is made:

In the sounding record, a 19-foot sounding was taken in mid-channel just above the A.C.L. docks at Port Tampa. In the remarks column opposite this sounding, there appears a note above your initials to "plot as 25". The smooth sheet was plotted in accordance with these instructions, but it is not considered that you had sufficient proof to alter that sounding in view of the important location and lack of any explanation. Furthermore, the descriptive report, which bears your signature, reads as follows:

> "This anchorage (off A.C.L. docks) is obstructed by a 19 foot rocky patch 300 meters 320° true from the northwest corner of Port Tampa Dock. This is marked by an H. S. buoy."

The bearing and distance check with the plotted position of the above sounding, but the notation is incorrect in regard to the H. S. buoy. If it was intended in the above quotation to refer to the obstruction marked by the buoy, your note is incorrect as to location and depth, as the smooth sheet shows 21 feet as the least depth obtained at the buoy and the buoy lies about 500 meters to the southwest of the above mentioned sounding.

The 19-foot sounding will be charted pending additional information from you.

A short distance southwest of the buoy on the western edge of the main channel is a 15-foot sounding. The record states that an error of one fathom was probably made in reading the lead

line and that no obstruction was known to exist here. However, this information is insufficient to warrant a rejection of the original sounding, especially considering the protruding character of the 18-foot curve at this point and the sparsity of soundings. The 15-foot sounding is accordingly retained for use on the chart.

On the edge of the main channel a little less than one mile above Port Tampa Dock is a 13-foot sounding surrounded by 17 to 21 feet. No mention is made in the records in regard to this, although it is possible that there was an error in reading the lead line. On account of lack of information, it is necessary to chart the 13-foot sounding.

About 350 meters southwest of triangulation signal East Pole, near the east end of Gandy Bridge, there are several soundings that appear doubtful, and it is noted from the record that some confusion existed at the time, which may account for the apparent discrepancies. The soundings and positions have been maintained as recorded, as there is no information to warrant a change.

In view of the importance of the area where the doubtful soundings are located, it is not understood why you failed to have an examination made before closing the field work to clear up the records. The hydrographer was at fault in not making an examination immediately after the soundings were recorded.

It is noted that the hydrographer failed to carry the soundings into a development of the low water curve, but instead drew a low water line on his boat sheet. Numerous notes appeared to the effect that certain areas are bare at low water.

This line is shown at a considerable distance offshore from the high water line and in no way agrees with the low water line of the old survey. This delineation on the boat sheet conflicts with a statement in the descriptive report written by you that no changes have taken place inshore. A comparison with the old survey shows a remarkable stability in the shore line and the 6-foot curve so that it is assumed that the low water line, as shown on the old survey, is correct. It is noted that the topographer does not show any extensive low water line on any portion of his sheet.

It is not understood why the sounding lines were not carried to the low water line instead of being stopped in 4 and 5 feet, especially as this matter was called to your attention in previous correspondence. It is not understood how you can certify that there has been no change from the old surveys unless your party has made a survey of the area in question.

Enclosure.

R. T. Harris

Acting Director.

Form 537
11—5812

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO. 4562

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. A

REGISTER NO. 4562

State Florida

General locality Tampa Bay ~~Gulf Coast Florida~~

Locality Old Tampa Bay

Scale 1:20,000 Date of survey Jan 13 ~ Mar 14 ~~January-February~~, 192 0

Vessel Str. B.CH

Chief of Party Ray L. Schoope

Surveyed by H. C. Overton

Protracted by F. G. Johnson G. M. Marchand

Soundings penciled by F. G. Johnson

Soundings in ~~fathoms~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated June 3, 1924 Dec. 3, 1925

Remarks:

GPO

November 18, 1926.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4562

Locality: TAMPA BAY, FLORIDA.

Chief of Party: R. L. Schoppe.

Plane of reference is M L W
4.4 ft. on tide staff at Gandy Bridge
2.9 ft. ------ do ------- Bay View

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted
3. Time meridian not given at beginning of day's work.
4. Time (whether A. M. or P. M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

H. A. Marmer

Acting Chief, Division of Tides and Currents.